

REMARKS

Favorable reconsideration of this application is respectfully requested. Claims 1-15 are pending and claims 16-168 are withdrawn. In this Amendment, claims 9 and 13 are amended. No new matter is added.

Applicants thank Examiner Dharia for the courtesies extended to Applicants' counsel during an April 14, 2005, Telephone Interview (1st Examiner Interview) in which the outstanding rejections were discussed. Applicants thank the Examiner Shalwala for the courtesies extended to Applicants' counsel during an April 20, 2005, Telephone Interview (2nd Examiner Interview) and during an April 29, 2005 Telephone Interview (3rd Examiner Interview) in which the outstanding rejections were discussed. Hereinafter, Examiners Dharia and Shalwala will together be referred to as "the Examiners." During the 1st and 2nd Examiner Interview, Applicants' counsel discussed with the Examiners the fact that Section 10 of the April 14, 2005 Office Action included a *prima facie* improper rejection of the claims where neither the basis for rejection nor the references used as a basis for the rejection were set forth in the Office Action.

During the 1st and 2nd Examiner Interviews, Applicants' counsel also discussed with the Examiners the fact that the rejection of claim 15 was based on an erroneous understanding of chemical terms on the part of the Examiners. In addition, during the 1st and 2nd Examiner Interviews, Applicants' counsel pointed out that the April 14, 2005 Office Action failed to identify many of the terms that the April 14, 2005 Office Action asserted were equivalent to features of the claims. As agreed during the 2nd Examiner Interview, the Examiners have written the April 28, 2005 Office Action (hereinafter referred to as "the Office Action") to replace the April 14, 2005 Office Action. A separate record of the substance of 1st, 2nd, and 3rd Examiner interviews is found above and is also contained in the comments below.

As also agreed during the 2nd Examiner Interview, Sections 8 and 9 of the Office Action indicate that all rejections set forth in the November 23, 2004 Office Action have been withdrawn.

A. Response to Rejection of Claims 1-4 under 35 U.S.C. § 103(a) as being as being unpatentable based on Yumoto in view of Scheffer

At sections 3 and 4 of the Office Action, claims 1-4 are rejected under 35 U.S.C. § 103(a) as being as being unpatentable based on U.S. Patent No. 6,542,142 to Yumoto *et al.* (Yumoto) in view of U.S. Patent No. 5,585,816 to Scheffer *et al.* (Scheffer). This rejection is respectfully traversed with respect to the claims as currently presented.

This rejection is *prima facie* improper because it provides no appropriate basis for combining Scheffer with Yumoto. As set forth in the Manual of Patent Examining Procedure (MPEP) at § 706.02(j), “To establish a *prima facie* case of obvious . . . there must be some suggestion or motivation, *either in the references themselves or in the knowledge generally available to one of ordinary skill in the art*, to modify the reference or to combine reference teachings (emphasis added) . . . The teaching or suggestion to make the claimed combination and the reasonable expectation of success *must both be found in the prior art and not based on applicant’s disclosure* (emphasis added). *In re Vaeck*, 947 F.2d. 488, 20 USPQ2d 1438 (Fed. Cir. 1991).”

The Office Action attempts to justify combining Scheffer with Yumoto based on the following conclusory statement which relies not on the references of Scheffer or Yumoto, but instead on Applicant’s own disclosure:

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Scheffer et al. [into] the teaching of Yumoto et al. to be able to control pulse width using recursive feedback control to control light intensity of each light modulating element or pixel to produce better resolution display (better contrast, better gray scale). (See Office Action, p. 4)

The above quoted conclusory statement fails to properly identify any text in Yumoto, Scheffer or any other reference that would provide any motivation for combining Scheffer with Yumoto. As stated by the Federal Circuit in *Sibia Neurosciences Inc. v. Cadus Pharmaceutical Corp.*, 55 USPQ2d 1927, 1931 (Fed. Cir. 2000), “[d]etermining whether there is a suggestion or motivation to modify a prior art reference is one aspect of determining the scope and content of the prior art, a fact question subsidiary to the ultimate conclusion of obviousness.” (citing *Tec Air, Inc. v. Denso Mfg.*, 52 USPQ2d 1296, 1297-98 (Fed. Cir. 1999) (stating that the factual underpinnings of obviousness include whether

a reference provides a motivation to combine its teachings with another)). Furthermore, as noted by the Federal Circuit in *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002), specific reasons must be shown in the art suggesting a combination of references. (See also *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (“[P]articular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.”); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) (“[E]ven when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination.”)).

Indeed, the Office Action cites no portion of Yumoto that teaches or suggests controlling a pulse width for any purpose. Accordingly, there would be no reason for a person of ordinary skill in the art, looking at Yumoto, to have any motivation to consider Scheffer or any other reference that controls pulse width for any purpose, much less for the purposes of the device of claims 1-4. In fact, the only grounds provided in the Office Action for combining Yumoto with Scheffer are improperly based on Applicant’s own disclosure, not the art relied upon in the rejection. Therefore, the rejection of claims 1-4, based on the combination of Scheffer and Yumoto is *prima facie* improper.

The rejection of claims 1-4 based on Yumoto in view of Scheffer is *prima facie improper* for additional reasons. As set forth in MPEP § 706.02(j), “To establish a *prima facie* case of obvious . . . The prior art reference (or references) when combined must teach or suggest ***all of the claim limitations*** (emphasis added).”

The device of claims 1-4 comprises a recursive feedback control means for controlling at least one pulse width using recursive feedback wherein the pulse width is used to drive an electrode means. However, as admitted in the Office Action, Yumoto “fails to teach recursive feedback control means for controlling at least one pulse width using recursive feedback, said pulse width driving said electrode means” (See Office Action, p. 3). Scheffer also fails to teach or suggest recursive feedback control means for controlling at least one pulse width using recursive feedback, where said pulse width drives said electrode means. In fact, the Office Action has failed to identify any feature in Yumoto or Scheffer, alone or in combination, that corresponds to a recursive feedback control means for controlling at least one pulse width using recursive feedback wherein the pulse width is used to drive an electrode means according to claim 1.

While the Office Action cites portions of Yumoto that include the terms “electrode”, “light modulating element” and portions of Scheffer that include the terms “electrode”, “recursive”, “feedback”, “pulse width”, *etc.*, it fails to explain how these terms relate to each other within these patents or between these two patents. In addition, the Office Action fails to identify any feature of Yumoto or Scheffer that corresponds to the “recursive feedback control means” of claim 1, much less that corresponds to a recursive feedback control means for controlling at least one pulse width using recursive feedback wherein the pulse width is used to drive an electrode means, or the device of claim 1 as a whole. As discussed with the Examiners during the 1st, 2nd and 3rd Examiner Interviews, the Office Action merely cites various scattered sections of Yumoto and Scheffer, and improperly leaves it to the Applicants to guess as to which elements in Yumoto and Scheffer the Office Action refers.

Even when the Office Action cites where particular features of claims 1-4 are allegedly shown, the cited features cannot be found in the cited sections. For example, the Office Action states that the “recursive feedback control means for controlling at least one pulse width” can be found in Figure 20, and Col. 52-57 of Scheffer (see Office Action, p. 3). However, the term “recursive feedback control” cannot be found in the cited Figure or in the cited portion of Scheffer. In fact, the term “recursive feedback” does not appear at all in Scheffer. Furthermore, the Office Action has failed to identify any term in Scheffer that is equivalent to the term “recursive feedback.”

The Office Action also improperly requires the Applicants to guess how the various cited sections of Yumoto and/or Scheffer relate to each other, or how the various cited sections of Yumoto and/or Scheffer together justify the Office Action’s assertions. For example, page 3 of the Office Action makes the following conclusory statement:

Scheffer teaches . . . recursive feedback control means for controlling at least one pulse width (see figure 20, Col. 25, Lines 52-57 Pseudo Random Binary Sequences uses hardware to generate recursive feedback control, which Swift function uses to control pulse width modulation to control brightness, contrast, grayscale of pixels (each pixel consists of pixel electrodes) (Col. 14, Lines 40-67) . . . (see Office Action, p. 3)

However, Col. 14, lines 40-67 does not describe anything about Pseudo Random Binary Sequences, recursive feedback control or pulse width modulation, but instead describes the optical response to a Swift function drive unrelated to the device of claims 1-4. Similarly,

Col. 25, lines 52-57 does not describe anything about Pseudo Random Binary Sequences, recursive feedback control or Swift functions, but instead describe pulse width modulation unrelated to the device of claims 1-4. Accordingly, Yumoto and Scheffer, even in combination, fail to teach or suggest all of the limitations of claims 1-4.

The rejection of each of claims 2, 3 and 4 based on Yumoto in view of Scheffer is *prima facie* improper for the following additional reasons (see MPEP § 706.02(j) cited above regarding references teaching/suggesting all claim limitations):

1. In the device of claim 2, the recursive feedback is based on an output bit. The Office Action has identified no feature in Yumoto or Scheffer, alone or in combination, that corresponds to the recursive feedback being based on an output bit according to claim 2. Indeed, while the Office Action asserts that “Scheffer teaches recursive feedback is based on an output bit” (see Office Action, p. 4), the terms “recursive feedback” and “output bit” do not appear in Scheffer. Furthermore, the Office Action has failed to identify any terms in Scheffer that are the equivalent to “recursive feedback” and “output bit” according to claim 2.
2. Claims 3 and 4 are dependent on claim 2, and thus include at least all of the patentable features of claim. 2. Therefore, the rejection of claims 3 and 4 based on the combination of Scheffer with Yumoto is *prima facie* improper for the same reasons discussed above with respect to claim 2.
3. In the device of claim 3, the output bit is a drive output bit. The Office Action has identified no feature in Yumoto or Scheffer, alone or in combination, that corresponds to the drive output bit of claim 3. Indeed, while the Office Action asserts that “Scheffer teaches output bit is a drive output bit” (see Office Action, p. 4), the terms “output bit” and “drive output bit” do not appear in Scheffer. Furthermore, the Office Action has failed to identify any terms in Scheffer that are the equivalent to the “output bit” and especially the “drive output bit” according to claim 3.

4. In the device of claim 4, the output bit is an intermediate output bit. However, the Office Action has identified no feature in Yumoto or Scheffer, alone or in combination, that corresponds to an output bit according to claim 4. Indeed, while the Office Action asserts that “Scheffer teaches output bit is an intermediate output bit” (see Office Action, p. 4), the terms “output bit” and “intermediate output bit” do not appear in Scheffer. Furthermore, the Office Action has failed to identify any terms in Scheffer that are the equivalent to the “output bit” and “intermediate output bit” according to claim 4.
5. As discussed with the Examiners during the 1st, 2nd, and 3rd Examiner Interviews regarding the rejection of each of Claims 2, 3 and 4, the Office Action merely cites various scattered sections of Scheffer and improperly leaves it to the Applicants to guess as to which elements in Scheffer the Office Action is referring. The Office Action also forces Applicants to improperly speculate on how the various cited sections of Yumoto and/or Scheffer relate to each other, or how the various cited sections of Yumoto and/or Scheffer together justify the Office Action’s assertions. In view of specificity required by 37 CFR 1.104(c)(2) in rejecting claims, the rejection of each of claims 2, 3 and 4 in the Office Action is *prima facie* improper in this regard.

In summary, for at least the reasons discussed above, the rejection of claims 1-4 based on Yumoto in view of Scheffer should be withdrawn.

B. Response to Rejection of Claims 5-14 under 35 U.S.C. § 103(a) as Being Unpatentable Based on Yumoto in view of Scheffer, and Further in View of Van Dijk

At section 5 of the Office Action, claims 5-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yumoto of Scheffer as applied to claims 1-4, and further in view of U.S. Patent No. 4,847,854 to Van Dijk (Van Dijk). This rejection is respectfully traversed.

Claims 5-14 ultimately depend from claim 1. For reasons discussed above, the rejection of claims 1-4 based on Yumoto in view of Scheffer is *prima facie* improper. Therefore, for the same reasons, the rejection of claims 5-14 based on the combination of Van Dijk with Yumoto and Scheffer is also *prima facie* improper.

Without regard to claims 1-4, the Office Action has also provided no proper motivation for combining Van Dijk with Scheffer and Yumoto in rejecting claims 5-14. (See MPEP § 706.02(j), cited cases and relevant text discussed in Section A above regarding “motivation to combine references.”) In rejecting claims 5-14, the Office Action attempts to justify combining Van Dijk with Yumoto and Scheffer based on the following conclusory statement which relies not on Van Dijk, Scheffer, and/or Yumoto, but instead on the Applicants’ own disclosure:

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Van Dijk. in to the teaching of [Yumoto] modified by Scheffer et al. to be able to control changes in pulse width using recursive feedback control based upon all data entered. (See Office Action, p. 5)

The above quoted conclusory statement fails to identify any text in Van Dijk, Scheffer, or Yumoto, or any other reference, that would provide any motivation for combining Van Dijk with the combination of Scheffer and Yumoto. (See MPEP § 706.02(j), cited cases and relevant text discussed in Section A above regarding “motivation to combine references.”) Indeed, the only grounds provided in the Office Action for combining Van Dijk with Scheffer and Yumoto is improperly based on Applicants’ own disclosure, not the art relied on in the rejection. Therefore, the rejection of claims 5-14 based on the combination of Van Dijk with Scheffer and Yumoto is *prima facie* improper.

The rejection of each of claims 5, 9, 11, 12 and 13 based on Yumoto in view of Scheffer, even when considered further in view of Van Dijk, is *prima facie* improper for the following additional reasons (see MPEP § 706.02(j) cited in Section A above regarding references teaching/suggesting all claim limitations):

1. The device of claim 5 includes a backplane, the backplane further including a recursive feedback control means. The Office Action has identified no feature in Van Dijk, Yumoto or Scheffer, alone or in combination, that corresponds to a backplane, and especially a backplane that includes a recursive feedback control means, according to claim 5. Indeed, while the Office Action asserts that “Van Dijk teaches device includes a backplane and wherein said backplane includes said recursive feedback control means” (see Office Action, p. 5), the term “recursive feedback” does not appear in Van Dijk. Furthermore, the Office Action has failed to identify any terms in Van Dijk that are the equivalent to a “recursive feedback control means”, much less equivalent to a backplane that includes a recursive feedback control means according to claim 5.
2. The device of claim 6 includes a panel interface controller, the panel interface controller further including said recursive feedback control means. The Office Action has identified no feature in Van Dijk, Yumoto or Scheffer, alone or in combination, that corresponds to a panel interface controller, and especially a panel interface controller that includes said recursive feedback control means. Indeed, while the Office Action asserts that “Van Dijk teaches device includes a panel interface controller and wherein said panel interface controller includes said recursive feedback control means” (see Office Action, p. 5), the terms “recursive feedback” and “panel interface controller” do not appear in Van Dijk. Furthermore, the Office Action has failed to identify any terms in Van Dijk that are the equivalent to a “recursive feedback control means” or to a “panel interface controller”, much less equivalent to a panel interface controller that includes a recursive feedback control means, according to claim 6.

3. In the device of claim 9, the array of light modulating elements is on a single silicon backplane. The Office Action has identified no feature in Van Dijk, Yumoto or Scheffer, alone or in combination, that corresponds to an array of light modulating elements that is on a single silicon backplane as claimed by claim 9. Indeed, while the Office Action asserts that “Van Dijk teaches array of light modulating elements on a single silicon backplane” (see Office Action, p. 6), the terms “silicon backplane” and “an array of light modulating elements” do not appear in Van Dijk. Furthermore, the Office Action has failed to identify any terms in Van Dijk that are the equivalent to a “single silicone backplane” or to an “array of light modulating elements”, much less equivalent to an array of light modulating elements on a single silicon backplane, according to claim 9.
4. In the device of claim 11, the recursive feedback is implicit. The Office Action has identified no feature in Van Dijk, Yumoto or Scheffer, alone or in combination, that corresponds to a device wherein the recursive feedback is implicit as claimed by claim 11. Indeed, while the Office Action asserts that “Van Dijk teaches recursive feedback is implicit” (see Office Action, p. 6), the terms “recursive feedback” and “implicit” do not appear in Van Dijk. Furthermore, the Office Action has failed to identify any term in Van Dijk that is the equivalent to “recursive feedback”, much less equivalent to “implicit recursive feedback” according to claim 11.
5. In the device of claim 12, the at least one pulse width comprises at least two pulse widths. The Office Action has identified no feature in Van Dijk, Yumoto or Scheffer, alone or in combination, that corresponds to a device wherein the at least one pulse width comprises at least two pulse widths. Indeed, while the Office Action asserts that “Van Dijk teaches pulse width comprises at least two pulse widths.” (see Office Action, p. 6), the term “pulse width” does not appear in Van Dijk. Furthermore, the Office Action has failed to identify any term in Van Dijk that is the equivalent to “pulse

width”, much less equivalent to a pulse width comprising at least two pulse widths according claim 12.

6. The device of claim 13 includes a plurality of pixel value bits for controlling a pixel value of the pulse width, and wherein the recursive feedback control means only uses some of the pixel value bits to determine a next state of said pulse width. The Office Action has identified no feature in Van Dijk, Yumoto or Scheffer, alone or in combination, that corresponds to a device that includes a plurality of pixel value bits for controlling a pixel value of a pulse width, and/or wherein the recursive feedback control means only uses some of the pixel value bits to determine a next state of the pulse width, according to claim 13. Indeed, while the Office Action asserts that “Scheffer et al. teaches device include a plurality of pixel value bits for controlling a pixel value.” (see Office Action, p. 7), the terms “pixel value” and “pixel value bit” do not appear in Scheffer. Furthermore, the Office Action has failed to identify any terms in Scheffer that are the equivalent to “pixel values” or the equivalent to “pixel value bits”, much less equivalent to a plurality of pixel value bits for controlling a pixel value of a pulse width, and/or wherein the recursive feedback control means only uses some of the pixel value bits to determine a next state of the pulse width, according to claim 13.
7. As discussed with the Examiners during the 1st, 2nd, and 3rd Examiner Interviews regarding the rejection of each of Claims 5, 6, 9, 11, 12 and 13, the Office Action merely cites various scattered sections of Scheffer and improperly leaves it to the Applicants to guess as to which elements in Scheffer the Office Action is referring. The Office Action also forces Applicants’ to improperly speculate on how the various cited sections of Yumoto, Scheffer and/or Van Dijk relate to each other, or how the various cited sections of Yumoto, Yumoto, Scheffer and/or Van Dijk relate together justify the Office Action’s assertions. In view of specificity required by 37

CFR 1.104(c)(2) in rejecting claims, the rejection of each of claims 5, 9, 11, 12 and 13 in the Office Action is *prima facie* improper in this regard.

In summary, for at least the reasons discussed above, the rejection of claims 5-14 based on Yumoto in view of Scheffer, and further in view of Van Dijk, should be withdrawn.

C. Response to Rejection of Claim 15 under 35 U.S.C. § 103(a) as Being Unpatentable Based on Yumoto, in view of Scheffer and Van Dijk, and further in view of Kang

At section 6 of the Office Action, claim 15 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yumoto in view of Scheffer and Van Dijk as applied to claims 1-14, and further in view of KR2002039800 to Kang *et al.* (Kang). This rejection is respectfully traversed.

Claim 15 is dependent on claim 14. For reasons discussed above, the rejection of claims 5-14 based on Yumoto, in view of Scheffer and further in view of Van Dijk, is *prima facie* improper. Therefore, for the same reasons, the rejection of claim 15 based on the combination of Kang with Van Dijk, Yumoto and Scheffer is also *prima facie* improper.

In addition, the rejection of claim 15 based on Yumoto, in view of Scheffer and Van Dijk, even when considered further in view of Kang, is *prima facie* improper for the following additional reasons (see MPEP § 706.02(j) cited in Section A above regarding references teaching/suggesting all claim limitations):

1. The device of claim 15 includes a visual display apparatus, wherein the visual display apparatus includes pH indicating means indicating when a liquid crystal and/or the environment surrounding the liquid crystal of the visual display apparatus is damaged. As discussed with the Examiners during the 1st, 2nd, and 3rd Examiner Interviews, the rejection of claim 15 based on Kang makes no sense to anyone with even a basic knowledge of chemistry. Indeed, the Office Action, as well as the Examiners during the

1st, 2nd, and 3rd Examiner Interviews, make the incredible suggestion that: (1) the term “Ph” as used in Kang is the same as the term “pH” as used by Applicants in claim 15; and (2) these terms (“Ph” and “pH”) would be considered to be the same by any person of ordinary skill in the art of chemistry.

2. The incredible suggestion by the Office Action, as well as by the Examiners during the 1st and 3rd Examiner Interviews, that the terms “Ph” and “pH” are the same is factually incorrect, as would be recognized by any person of ordinary skill in the art of chemistry. As shown in Bennett, *Concise Chemical and Technical Dictionary*, 4th Ed. (1986) (hereinafter referred to as “Bennett”) at page 886 (copy attached), the term “Ph” as used in Kang refers to a “phenyl” group, while the term “pH” refers to:

Hydrogen ion concentration, measured as the number of gram molecules of hydrogen ions per liter of solution, generally expressed as the logarithm of its reciprocal, i.e.,

$$pH = \log \frac{1}{[H]^+}$$

The pH is a measure of the acidity and alkalinity, neutrality being at pH 7; pH under seven indicates an acid solution and pH over seven an alkaline solution; the nearer the pH to seven the weaker the acid or the alkali (See Bennett, p. 886).

Bennett at page 890 (copy attached) describes a phenyl group as “The univalent C₆H₅ group” and Sax *et al.*, *Hawley’s Condensed Chemical Dictionary*, 11th Ed. (1987) (hereinafter referred to as “Sax”) at page 898 (copy attached) describes a phenyl group as “The univalent C₆H₅⁺ group derived from benzene and characteristic of phenol and other derivatives.” As would be recognized by anyone of ordinary skill in the art of chemistry, the term “phenyl group” is not the equivalent of the term “pH” or the term “pH indicating means” as used in claim 15.

3. The incredible suggestion by the Office Action, as well as by the Examiners during 1st and 3rd Examiner Interviews, that the terms “Ph” and “pH” are the

same is also unsupported by Kang. Nowhere in Kang, or in U.S. Patent No. 6,159,562 mentioned at page 8 of the Office Action, is there any mention of the term “pH” or acidity or alkalinity, much less of a pH indicator according to claim 15. The Office Action has merely identified organic compounds having a radical group, R, that includes a phenyl group, i.e., by the term “Ph.” Again, the term “Ph” is in no way equivalent to the term “pH” used in claim 15.

Without regard to claims 5-14, the Office Action has also provided no proper motivation for combining Kang with Van Dijk, Scheffer and Yumoto in rejecting claim 15. (See MPEP § 706.02(j), cited cases and relevant text discussed in Section A above regarding “motivation to combine references.”) In rejecting claims 5-14, the Office Action attempts to justify combining Kang with Van Dijk, Scheffer and Yumoto with the following conclusory statement which relies not on Kang, Van Dijk, Scheffer, and/or Yumoto, or even U.S. Patent No. 6,159,562 mentioned at page 8 of the Office Action, but instead on the Applicants’ own disclosure:

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Kang et al. in to the teaching of Yumoto modified by Scheffer et al and Van Dijk to be able to have field sequential LCD display to improve contrast and it will all exhibit a discotic disordered phase directly below isotropic phase (damaged to display material) (see Office Action, p. 8)

The above quoted conclusory statement fails to identify any text in Kang, Van Dijk, Scheffer, Yumoto, U.S. Patent No. 6,159,562, or any other reference, that would provide any motivation for combining Kang with the combination of Van Dijk, Scheffer and Yumoto. In fact, it is unclear to the Applicants even what is being asserted in the above-quoted paragraph.

Indeed, the only grounds provided in the Office Action for combining Kang with the combination of Van Dijk, Scheffer and Yumoto is improperly based on Applicants’ own disclosure, not the art relied on in the rejection. Therefore, the rejection of claim 15, based on the combination of Kang with Van Dijk, Scheffer and Yumoto is *prima facie* improper.

The rejection of claim 15 based on Kang in view of the combination of Van Dijk with Scheffer and Yumoto is *prima facie* improper for the following additional reasons (see MPEP § 706.02(j) cited in Section A above regarding references teaching/suggesting all claim limitations):

1. The device of claim 15 includes a visual display apparatus, wherein the visual display apparatus includes pH indicating means. The Office Action has not properly identified any feature in Kang, Van Dijk, Yumoto, Scheffer, or U.S. Patent No. 6,159,562, alone or in combination, that corresponds to a pH indicating means according to claim 15. Indeed, while the Office Action asserts that “Kang et al. teaches visual display apparatus is an LCoS device and wherein said visual display apparatus includes pH indicating means” (see Office Action, p. 8), the terms “pH” and “pH indicating means” do not appear in Kang or in U.S. Patent No. 6,159,562. Furthermore, the Office Action has failed to properly identify any terms in Kang or in U.S. Patent No. 6,159,562 that are the equivalent to “pH” and “pH indicating means” according to claim 15.
2. As discussed with the Examiners during the 1st, 2nd, and 3rd Examiner Interviews, the Office Action merely cites various scattered sections of Kang and improperly leaves it to the Applicants to guess as to which elements in Kang and U.S. Patent No. 6,159,562 the Office Action is referring. The Office Action also forces Applicants to improperly speculate on how the various cited sections of Yumoto and/or Scheffer and/or Van Dijk and/or Kang and/or U.S. Patent No. 6,159,562 relate to each other, or how the various cited sections of Yumoto and/or Scheffer and/or Van Dijk and/or Kang and/or U.S. Patent No. 6,159,562 together justify the Office Action’s assertions. Indeed, the Office Action does not even cite particular sections of U.S. Patent No. 6,159,562 upon which the Office Action relies. In view of specificity required by 37 CFR 1.104(c)(2) in rejecting claims, the rejection of claim 15 in the Office Action is *prima facie* improper in this regard.

In summary, for at least the above reasons, the rejection of claims 15 based on Yumoto in view of Scheffer and Van Dijk, and further in view of Kang, should be withdrawn.

D. Claims 1-15 Have Been Rejected Based on Facts Within the Personal Knowledge of the Examiners

Claims 1-15 have also been rejected on the basis of facts within the personal knowledge of the Examiners, in violation of 37 CFR 104(d)(2):

1. As discussed with the Examiners during the 1st, 2nd, and 3rd Examiner Interviews, in rejecting claims 1-15, the Examiners make the assertion that Scheffer teaches a recursive feedback control means for controlling at least one pulse width using recursive feedback, teaches using a pulse width to drive an electrode means, and teaches a device comprising a recursive feedback control means for controlling at least one pulse width using recursive feedback wherein the pulse width is used to drive an electrode means (See Office Action, pages 3). However, the Examiners have failed to cite any text in Scheffer that describes: (a) a recursive feedback control means for controlling at least one pulse width using recursive feedback, has failed to cite any text in Scheffer that describes using a pulse width to drive an electrode means; or (b) a device comprising a recursive feedback control means for controlling at least one pulse width using recursive feedback wherein the pulse width is used to drive an electrode means. The Examiners also cite no portion of Yumoto, Scheffer or any other reference to justify the following conclusory statement by the Examiners used as a basis of their rejection:

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Scheffer et al. in to the teaching of Yumoto et al. to be able to control pulse width using recursive feedback control to control light intensity of each light modulating element or pixel to

produce better resolution display (better contrast, better gray scale).
(See Office Action, p. 4)

The Examiners also improperly leave it to the Applicants to guess how the various cited sections of Yumoto and/or Scheffer relate to each other and how together the various cited sections of Yumoto and/or Scheffer justify the Examiners' assertions. For example, the Examiners make the following conclusory statement at page 3 of the Office Action:

Scheffer teaches . . . recursive feedback control means for controlling at least one pulse width (see figure 20, Col. 25, Lines 52-57 Pseudo Random Binary Sequences uses hardware to generate recursive feedback control, which Swift function uses to control pulse width modulation to control brightness, contrast, grayscale of pixels (each pixel consists of pixel electrodes) (Col. 14, Lines 40-67) . . . (see Office Action, p. 3)

However, Col. 14, lines 40-67 does not describe anything about Pseudo Random Binary Sequences, recursive feedback control or pulse width modulation., but instead describe the optical response to a Swift function drive. Furthermore, Col. 25, lines 52-57 do not describe anything about Pseudo Random Binary Sequences, recursive feedback control or Swift functions, but instead describe pulse width modulation. The Office Action also improperly forces Applicants to speculate on how the information in unrelated sections of Scheffer: Col. 25 lines 52-57 and Col. 14, lines 40-67, relate to each other, or how these unrelated sections may be combined together to justify the Examiner's assertions.

2. With respect to claims 2-4, while the Examiners assert that "Scheffer teaches recursive feedback is based on an output bit" (see Office Action, p. 3), the terms "recursive feedback" and "output bit" do not appear in Scheffer. Furthermore, the Examiners have failed to identify any terms in Scheffer that are the equivalent to "recursive feedback" and "output bit," as claimed in claim 2. Also, with respect to claim 3, despite the fact that the Examiners assert that "Scheffer teaches output bit is a drive output bit" (see Office Action, p. 4), the terms "output bit" and "drive output bit" do not

appear in Scheffer. Furthermore, the Examiners have failed to identify any terms in Scheffer that are the equivalent to “output bit” and “drive output bit,” according to claim 3. With respect to claim 4, while the Examiners assert that “Scheffer teaches output bit is an intermediate output bit” (see Office Action, p. 4), the terms “output bit” and “intermediate output bit” do not appear in Scheffer. Furthermore, the Examiners have failed to identify any terms in Scheffer that are the equivalent to “output bit” and “drive output bit,” according to claim 4.

3. With respect to claim 5, while the Office Action asserts that “Van Dijk teaches device includes a backplane and wherein said backplane includes said recursive feedback control means” (see Office Action, p. 5), the term “recursive feedback” does not appear in Van Dijk. Furthermore, the Office Action has failed to identify any terms in Van Dijk that are the equivalent to a “recursive feedback control means”, much less equivalent to a backplane that includes a recursive feedback control means, according to claim 5.
4. With respect to claim 6, while the Office Action asserts that “Van Dijk teaches device includes a panel interface controller and wherein said panel interface controller includes said recursive feedback control means” (see Office Action, p. 5), the terms “recursive feedback” and “panel interface controller” do not appear in Van Dijk,. Furthermore, the Office Action has failed to identify any terms in Van Dijk that are the equivalent to a “recursive feedback control means” or to a “panel interface controller”, much less equivalent to a panel interface controller that includes a recursive feedback control means, according to claim 6.
5. With respect to claim 9, while the Office Action asserts that “Van Dijk teaches array of light modulating elements on a single silicon backplane” (see Office Action, p. 6), the terms “silicon backplane” and “an array of light modulating elements” do not appear in Van Dijk,. Furthermore, the Office Action has failed to identify any terms in Van Dijk that are the

equivalent to a “single silicone backplane” or to an “array of light modulating elements”, much less equivalent to an array of light modulating elements on a single silicon backplane, according to claim 9.

6. With respect to claim 11, while the Office Action asserts that “Van Dijk teaches recursive feedback is implicit” (see Office Action, p. 6), the terms “recursive feedback” and “implicit” do not appear in Van Dijk,. Furthermore, the Office Action has failed to identify any term in Van Dijk that is the equivalent to “recursive feedback”, much less equivalent to “implicit recursive feedback” according to claim 11.
7. With respect to claim 12, while the Office Action asserts that “Van Dijk teaches pulse width comprises at least two pulse widths.” (see Office Action, p. 6), the term “pulse width” does not appear in Van Dijk,. Furthermore, the Office Action has failed to identify any term in Van Dijk that is the equivalent to “pulse width”, much less equivalent to a pulse width comprising at least two pulse widths, according to claim 12.
8. With respect to claim 13, while the Office Action asserts that “Scheffer et al. teaches device include a plurality of pixel value bits for controlling a pixel value” (see Office Action, p. 7), the terms “pixel value” and “pixel value bit” do not appear in Scheffer,. Furthermore, the Office Action has failed to identify any terms in Scheffer that are the equivalent to “pixel values” or the equivalent to “pixel value bits”, much less equivalent to a device that includes a plurality of pixel value bits for controlling a pixel value of a pulse width and wherein the recursive feedback control means only uses some of the pixel value bits to determine a next state of the pulse width, according to claim 13.
9. With respect to claims 15, the Examiners make the assertion that “Kang teaches visual display apparatus is an LCoS device and wherein said visual display apparatus includes pH indicating means” (see Office Action, p. 8).

However, the terms “pH” and “pH indicating means” do not appear in Kang or in U.S. Patent No. 6,159,562. Furthermore, the Office Action has failed to identify any terms in Kang or U.S. Patent No. 6,159,562 that are the equivalent to “pH” and “pH indicating means” according to claim 15.

10. As admitted by the Examiners during the 1st, 2nd and 3rd Examiner Interviews, neither of the Examiners has sufficient chemical knowledge to understand the difference between the term “Ph” as used in Kang and the term “pH indicating means” according to claim 15. While Applicants’ counsel pointed out that Examiner Dharia’s understanding of the terms “Ph” in Kang and “pH indicating means” in claim 15 was based on an erroneous understanding of chemistry, Examiner Dharia nonetheless maintained his rejection of claim 15 based on Kang. In fact, during the 2nd Examiner Interview, Examiner Shalwala agreed that claim 15 would be allowable if rewritten independent form, because the rejection appeared to be based on an erroneous understanding of the term “Ph” in Kang and “pH indicating means” in claim 15. However, and to the Applicants’ surprise, the Examiners then maintained their rejection of claim 15 based on Kang in the April 28, 2005 Office Action (which replaced the April 14, 2005 Office Action discussed with the Examiners during the 1st and 2nd Examiner Interviews). Indeed, during the 3rd Examiner Interview, Applicants’ counsel pointed out to Examiner Shalwala that the erroneous rejection of claim 15 based on Kang was still being maintained in the April 28, 2005 Office Action. Even so, during the 3rd Examiner Interview, Examiner Shalwala stated that the rejection of claim 15 had been reviewed by an alleged “chemical expert” in Examiner Shalwala’s Art Unit and was being maintained by the Examiners because this alleged “chemical expert” had determined that the term “Ph” (i.e., a phenyl group), as used in Kang, is the equivalent of a pH indicator according to claim 15. However, Examiner Shalwala has not: (a) identified the “chemical expert” that Examiner Shalwala consulted with; and (b) provided the Applicants with a written statement by this alleged “chemical expert” that that the term “Ph”

in Kang is equivalent to the term “pH indicating means” according to claim 15.

11. With regard to the rejections of claims 1-15, and as discussed with the Examiners during the 1st, 2nd, and 3rd Examiner Interviews, the Office Action, as well as the Examiners, merely cite to various sections of Yumoto, Scheffer, Van Dijk, Kang, and U.S. Patent No. 6,159,56, improperly leaving it to the Applicants to guess as to which elements in Yumoto, Scheffer, Van Dijk, Kang, and U.S. Patent No. 6,159,562 the Examiners are referring. The Office Action also improperly forces Applicants to speculate on how the various cited sections of Yumoto and/or Scheffer and/or Van Dijk and/or Kang and/or U.S. Patent No. 6,159,562 relate to each other, or how the various cited sections of Yumoto and/or Scheffer and/or Van Dijk and/or Kang and/or U.S. Patent No. 6,159,562 together justify the Office Action’s assertions. In fact, the Office Action does not even cite any particular section of U.S. Patent No. 6,159,562 that is being relied upon.

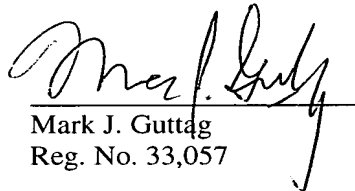
For at least the above reasons, not only have claims 1-15 have been rejected on the basis of facts within the personal knowledge of the Examiners. Accordingly, under 37 C.F.R. § 1.104(d)(2), the Applicants hereby request that the Examiners provide affidavit(s) or declaration(s) that contain these facts supporting each of the Examiners’ assertions used as a basis for the rejections of claims 1-15.

E. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance, and favorable action is respectfully solicited thereon.

If the Examiner has any questions or concerns regarding the present response, the Examiners are invited to contact Mark J. Gutttag at 703-591-2664, Ext. 2006.

Respectfully submitted,


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